Acquisition Directorate

Nationwide Automatic Identification System Project

Nationwide Automatic Identification System (NAIS) Overview

CG-939 | Mr. E. G. Lockhart

TEXAS II Conference | 3 Sep 2008

Agenda

Concept of Operations

Acquisition Strategy

Architecture

Timeline

Project Status

- Increment 1
- Increment 2
- Increment 3

Summary

NAIS Points of Contact

NAIS Project Overview

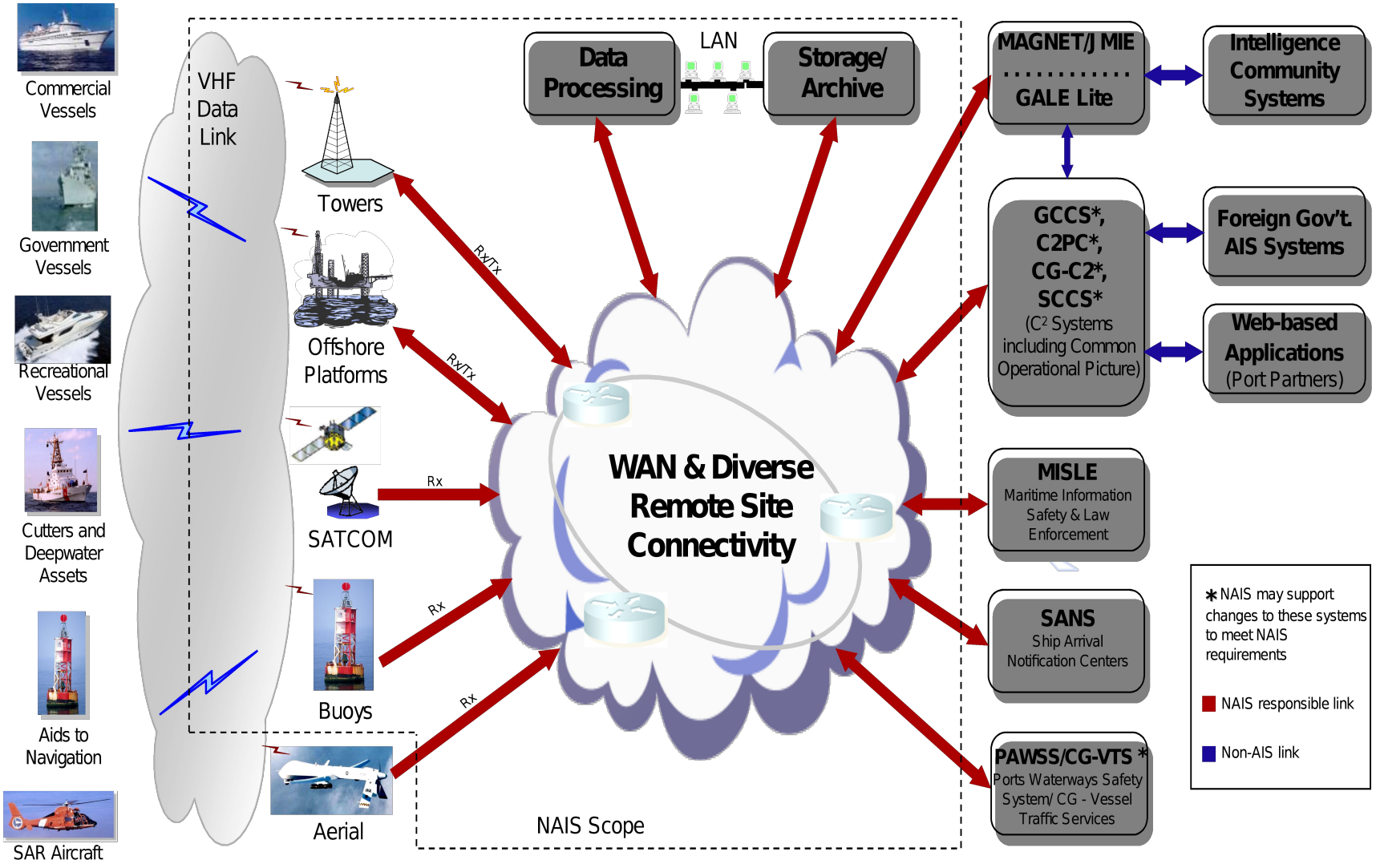
Concept of Operations

- Automatic reception of AIS messages from AIS-equipped vessels out to 2000 nm
- Transmission of AIS messages out to 24 nm from shore
- Correlation with other database systems for intelligence and operational decision makers
- Shared with others & displayed on a Common Operational Picture

Incremental Acquisition Strategy

- Increment 1 – “Receive only” in 55 critical ports and 9 coastal areas
- Increment 2 – Nationwide 50 nm receive and 24 nm transmit
- Increment 3 – Extended receive out to 2000 nm

NAIS Architecture

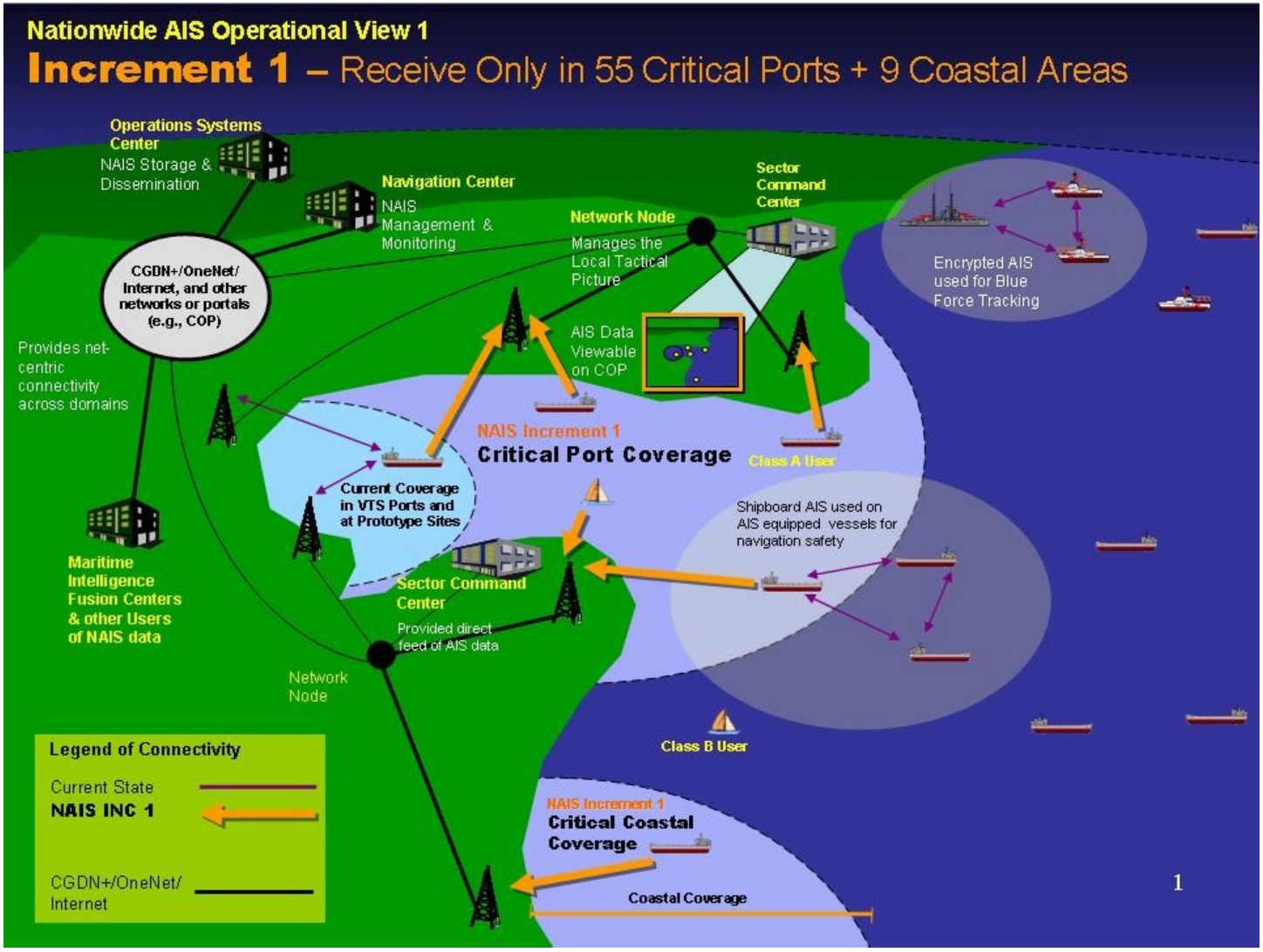


NAIS Project Timeline

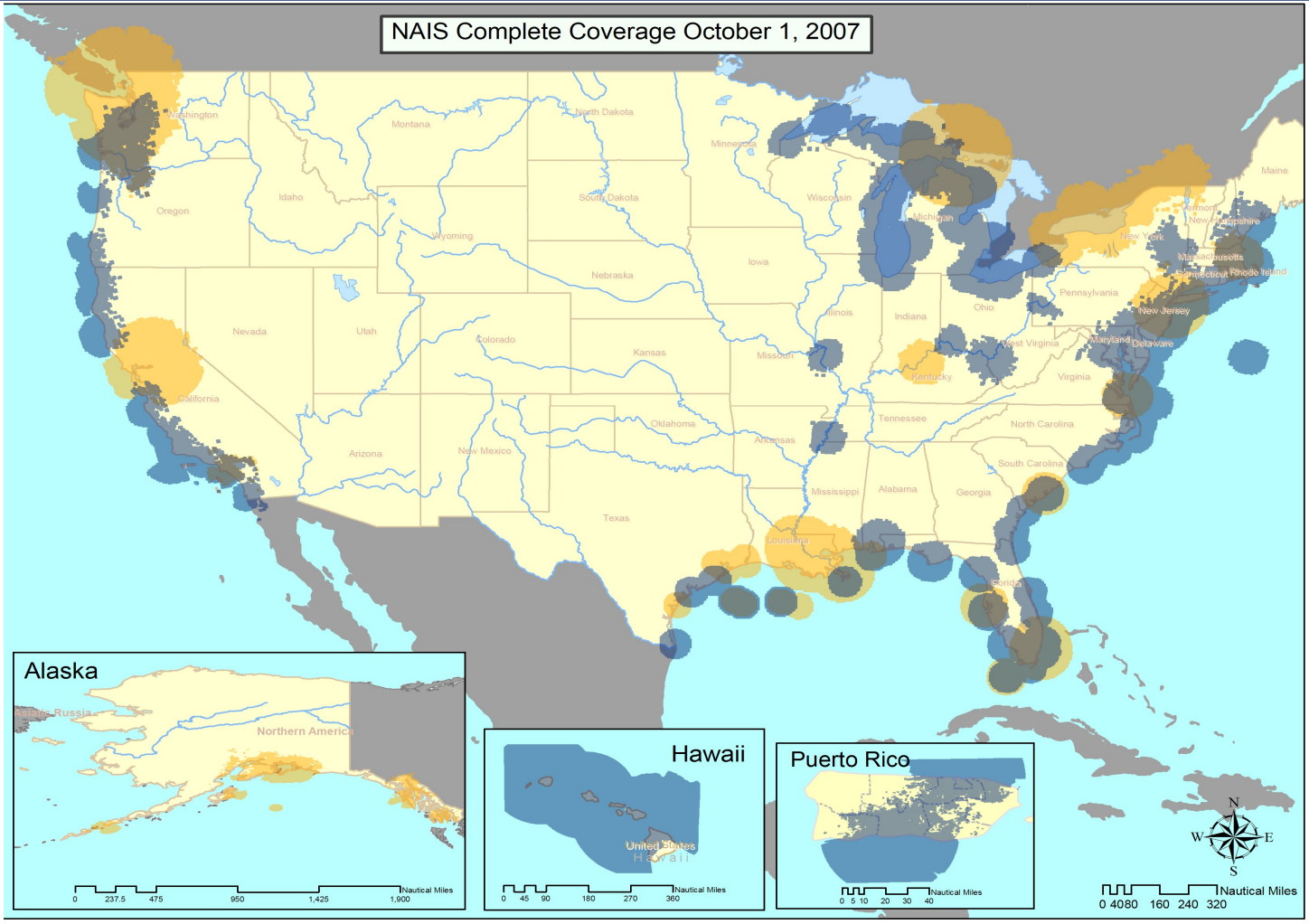
Incremental Acquisition

- Increment 1 – In Sustainment
  - Initial Operational Capability (IOC) – 31 Dec 2006
  - Full Operational Capability (FOC) – 30 Sep 2007
- Increment 2 – In Source Selection
  - Contract Award – Q4 FY 08
  - IOC – Q4 FY10
  - FOC – Q4 FY16
- Increment 3 – Currently In Concept Development
  - Assess prototype data feed performance and address technical issues
  - Refine acquisition strategy and performance requirements
  - Expecting contract for AIS data services over required areas

Increment 1 Conceptual View



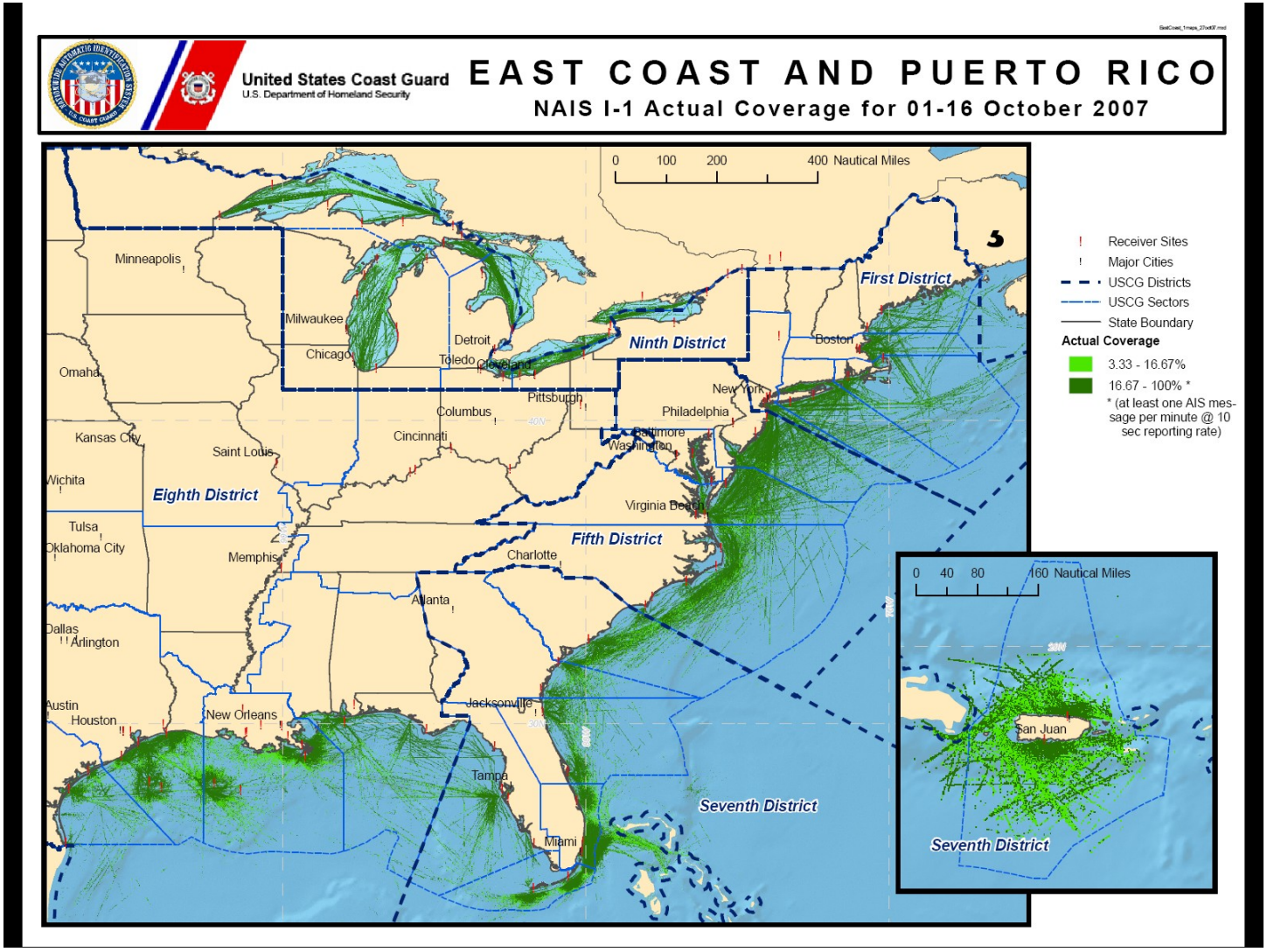
Increment 1 Predicted Coverage



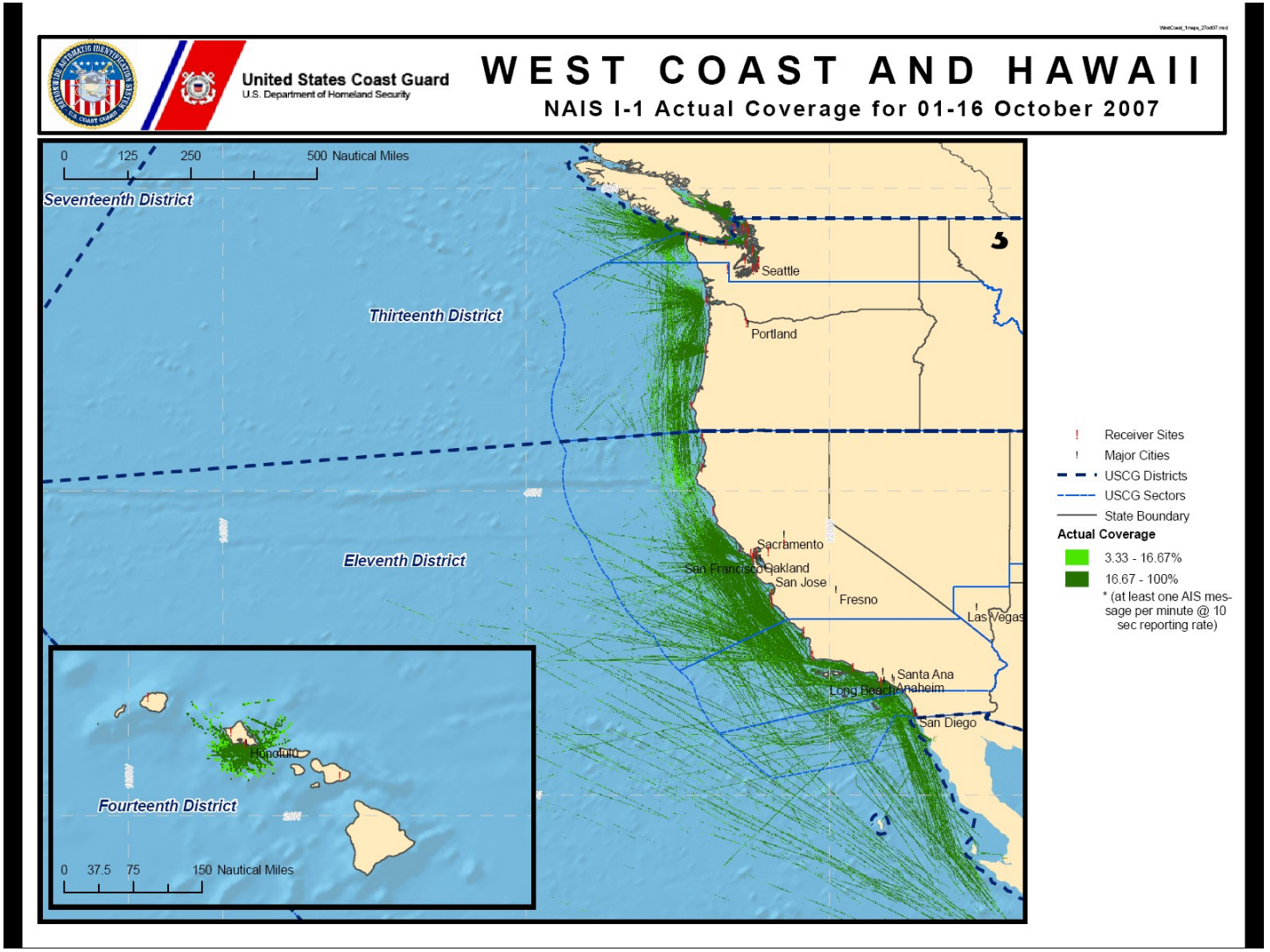
Blue – New Sites

Buff – Legacy/Contract/Partner Site

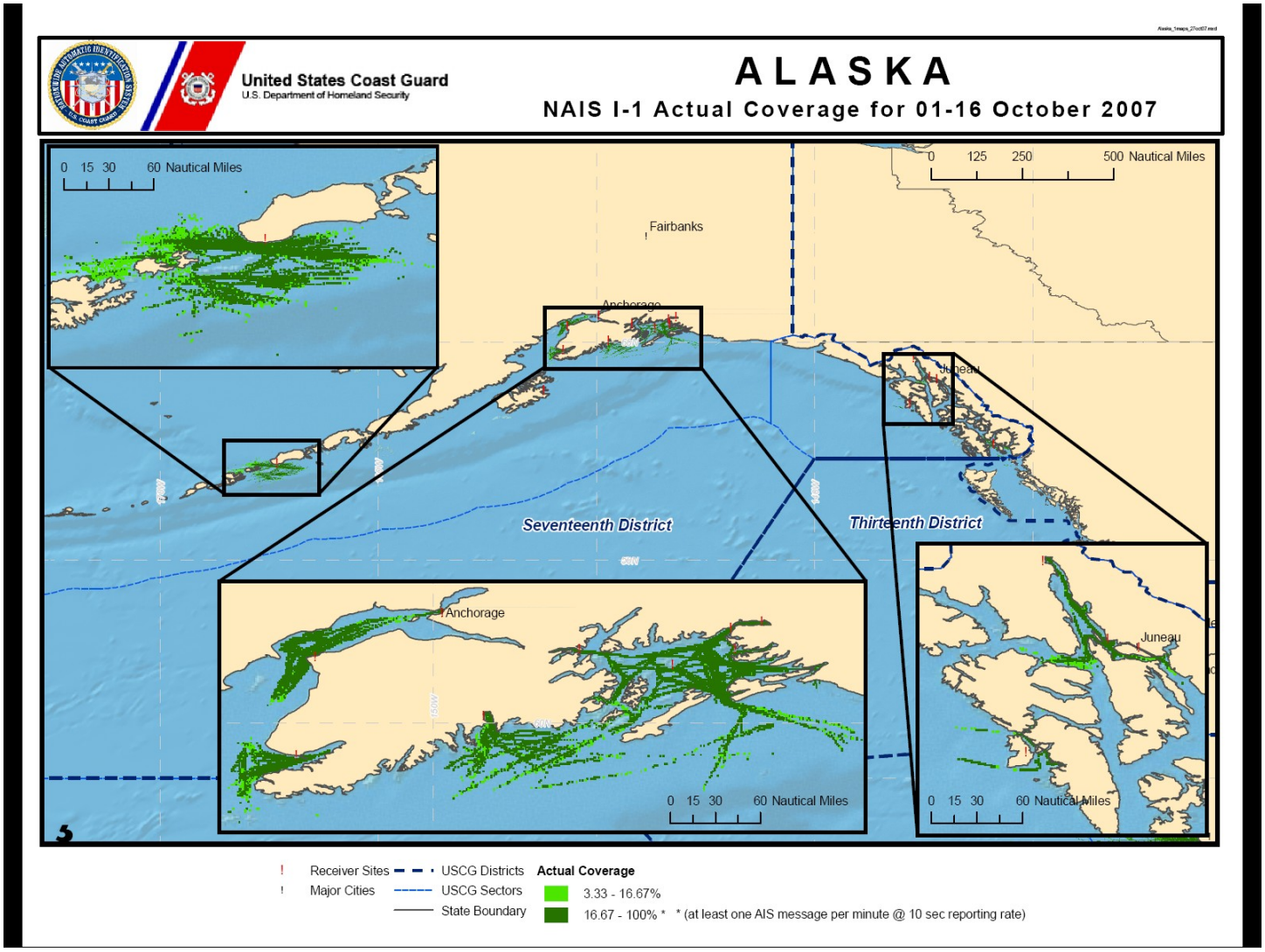
Increment 1 Received Tracks - Atlantic



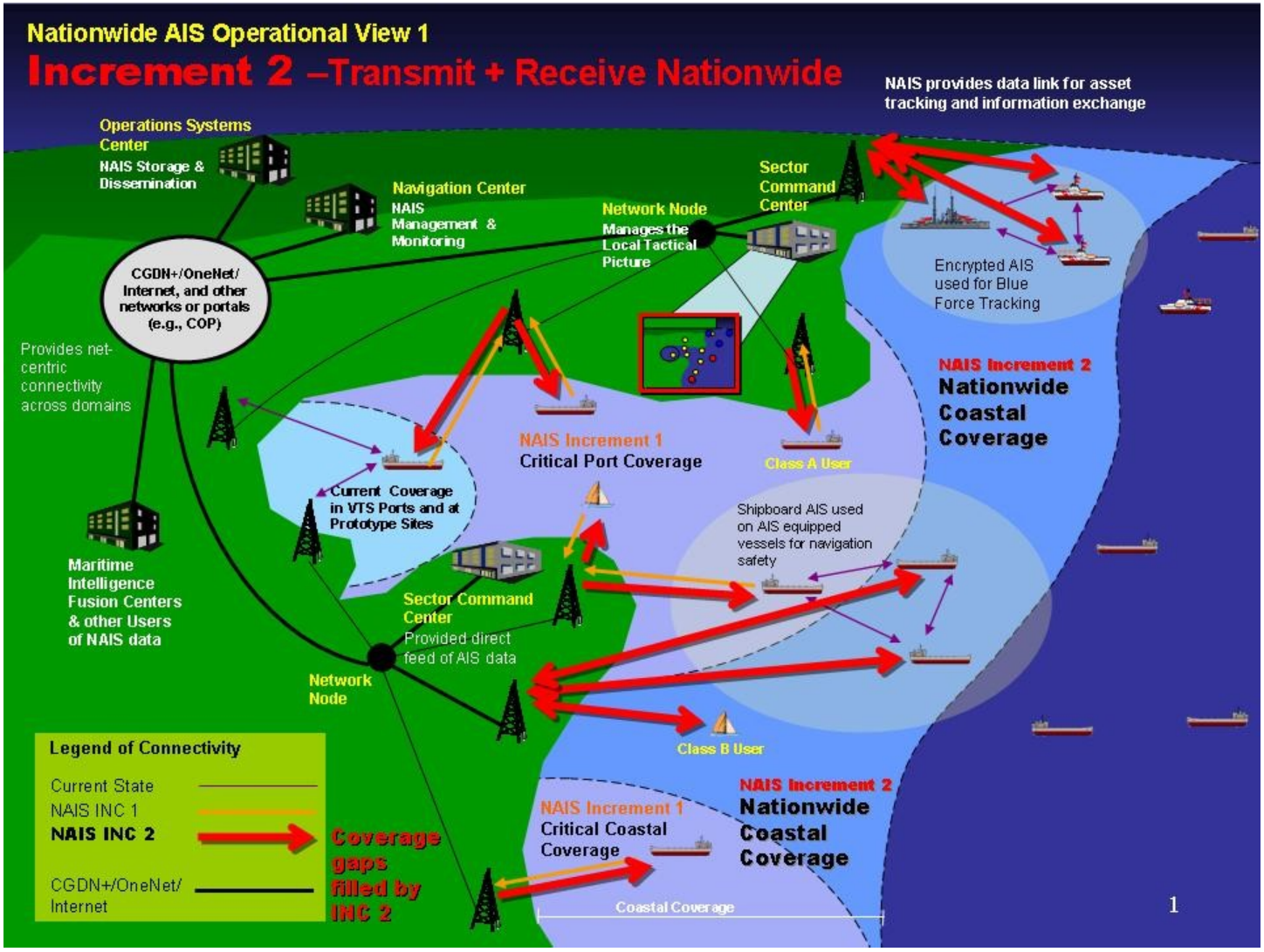
Increment 1 Received Tracks - Pacific



Increment 1 Received Tracks - Alaska



Increment 2 Conceptual View

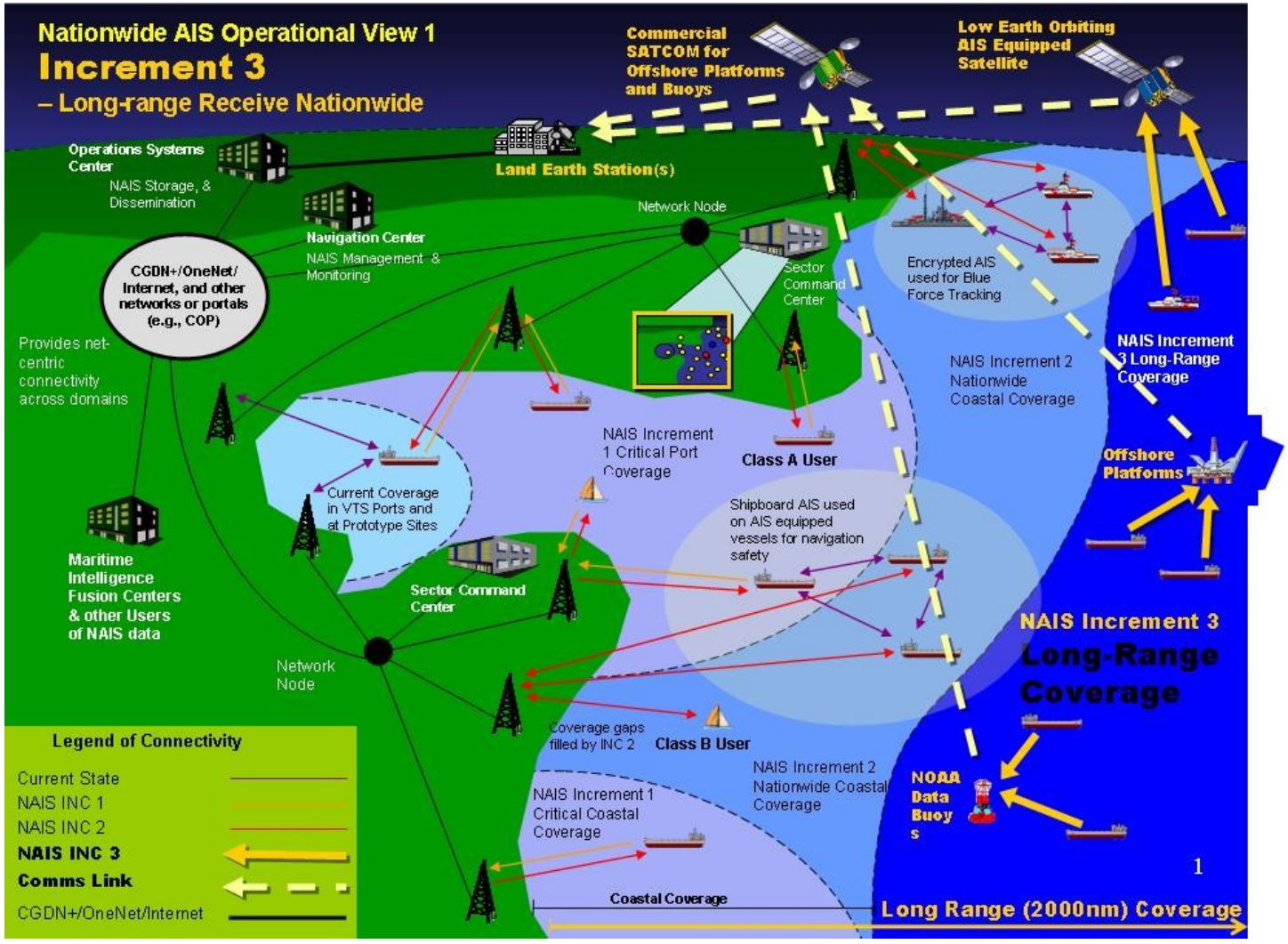


Increment 2 Status

Increment 2 Procurement

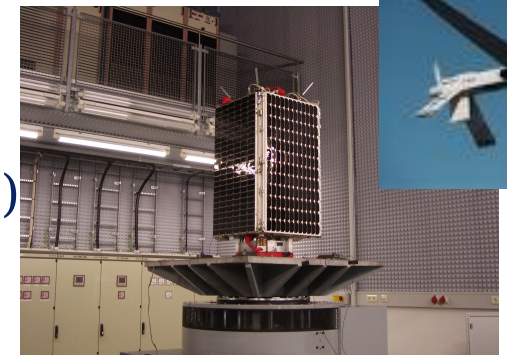
- Increment 2 divided into two phases
  - Phase 1 – “Core” functionality: AIS Transceiver Base Stations in 3 Sectors, Enterprise Data Center, System Operations Center, and Data Network
  - Phase 2 – Build-out of remaining 32 Sectors
- Phase 1 Request for Proposal Released December 2007
- Proposals Received March 2008
  - Source selection in process
  - Anticipate award by 30 September 2008

Increment 3 Conceptual View



Increment 3 Requirements / Solutions

- Requirements
  - Provide offshore receive coverage 50 nm out to 2000 nm
  - Update vessel tracks 50 – 300 nm every 2 hrs
  - Update vessel tracks 300 – 2000 nm every 4 hrs
- Possible Solutions
  - Offshore buoys – NOAA weather buoys
  - Offshore platforms – oil rig platforms
  - Satellites
  - Blimps / Aerostats
  - Unmanned Aerial Vehicles (UAVs)



Increment 3 Offshore Prototype Status

Increment 3 Prototpyes

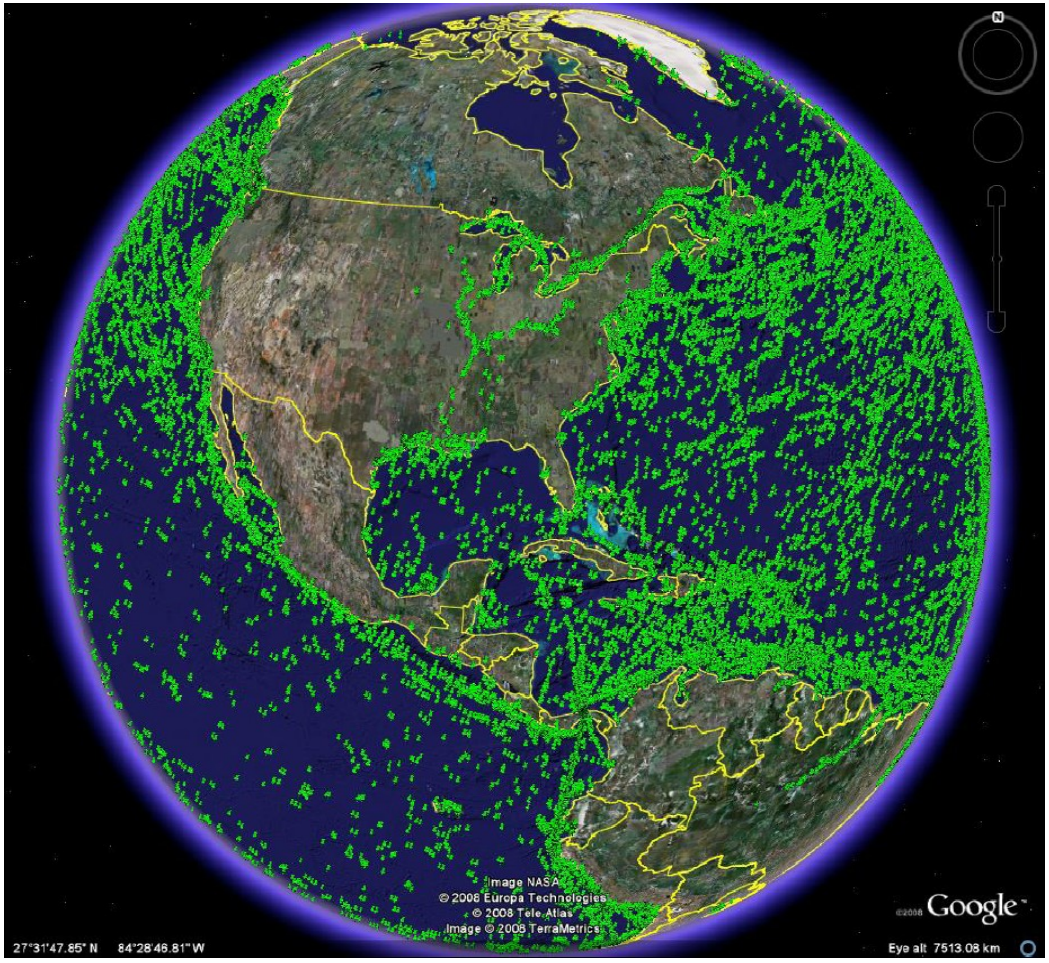
- NOAA Weather Buoys
  - Low-power package, store-and-forward via Iridium satellites
  - Four buoys deployed to date
  - Equipment issues (broken antennas)
  - Funding provided to repair and operate initial four through FY 09
- Offshore Oil Platforms
  - Four sites initially equipped with AIS base stations / receivers
  - One site destroyed by Hurricane Katrina
  - Three sites continue to feed NAIS via Vessel Traffic Systems (VTSs)

Increment 3 Satellite Prototype Status

Orbcomm Satellites

- Launched 6 Satellites 19 June 2008
  - Five AIS-equipped Orbcomm Quick Launch (QL) satellites
  - One AIS-equipped Concept Demonstration Satellite (CDS)
- CG receives 1 yr of CDS data (renewable), 90 days of QL data
- Limited testing began 29 June 2008
  - Approximately 270,000 messages being received daily
  - Tracking 16,000 individual vessels
  - Initial vessel track coverage very promising
  - Data flow to CG initiated August 2008
  - Status of data analysis results to date will be

Initial ORBCOMM Tracks – North America



AIS Satellite Challenges

Technical

- Receiver saturation (VDL loading)
- Timeslot collisions / message de-confliction
- Adjacent channel interference
- Downlink bandwidth requirements
- Overpopulation of transponders when Class B's are fielded

Political

- Tracking of vessels outside US
- Spectrum management of adjacent and AIS channels

Summary

NAIS Status

- Increment 1 - Operational
- Increment 2 – Phase 1 ready for contract award
- Increment 3 – Concept Demonstration Payload and Prototypes deployed, data validation and assessment is ongoing

NAIS Points of Contact

NAIS Staff

- Project Manager (PM) – CAPT Jerry Doherty – Jerry.D.Doherty@uscg.mil
- Deputy PM – CDR Keith Ingalsbe – James.K.Ingalsbe@uscg.mil
- Technical Director – Gene Lockhart – Eugene.G.Lockhart@uscg.mil

NAIS Link

- Project Site: http://www.uscg.mil/nais/

Questions?